



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/419,968	10/18/1999	SANDIP SARKAR	PA990566	2151

23696 7590 05/22/2003

Qualcomm Incorporated  
Patents Department  
5775 Morehouse Drive  
San Diego, CA 92121-1714

EXAMINER
----------

SONG, HOSUK

ART UNIT	PAPER NUMBER
----------	--------------

2131

DATE MAILED: 05/22/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

PRC

# Office Action Summary

Application No.

09/419,968

Applicant(s)

SARKAR

Examiner

HOSUK SONG

Art Unit

2131



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Feb 24, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

Art Unit: 2131

## DETAILED ACTION

### *Continued Prosecution Application*

1. The request filed on 2/24/03 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/419,968 is acceptable and a CPA has been established. An action on the CPA follows.

### *Claim Rejections - 35 USC § 102*

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 5,9 are rejected under 35 U.S.C. 102(e) as being anticipated by Saints (US 6,430,170).

In claims 5,9, Saints disclose a random number selector subsystem for generating random numbers from data bits generated from random received signal characteristics that are extracted from a received signal using existing wireless phone hardware in (col.3,lines 53-57 and col.3,lines 17-19; col.4,lines 29-36). An encryptor for encrypting a signal using the random numbers in (col.4,lines 23-36).

### *Claim Rejections - 35 USC § 103*

Art Unit: 2131

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Saints et al.(US 6,430,170) in view of Kocher et al.(US 6,278,783).

Claim 1: Saints disclose a method for generating random data bits in a wireless device by processing a received signal in (abstract and fig.4). Saints disclose extracting data bits from processed receive signal in (col.4,lines 29-31). Saints does not specifically disclose extracting data bits randomly. Kocher patent teaches random data extract selection process in (col.10,lines 61-64). It would have been obvious to person of ordinary skill in the art to implement random selection process taught in Kocher with data bits extracting method disclosed in Saints because random selection allows unrecognizable pattern for hackers to defeat the system and makes difficult for hackers to predict selection process. Further, since it is random, attackers can not force repeated attacks by introducing power failures or other processing interruptions. Note that in abstract Kocher disclose that technique is implementable in cryptographic smart cards,tamper resistant chips, and secure processing of all kinds. Saints disclose an encryptor for encrypting a signal using the random numbers in (col.4,lines 23-29,35-36).

Claims 4, 12: Saints and Kocher does not discloses Time Tracking Loop. The examiner takes Official notice that Time Tracking Loop is well known in the art especially in the wireless

Art Unit: 2131

communication environment. One of ordinary skill in the art would be motivated to use Time Tracking Loop in order to track variations in the receive propagation delay over time and thus maintaining bit synchronization.

5        Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saints et al.(US 6,430,170) in view of Kocher et al.(US 6,6,278,783) and further in view of Waldroup(US 6,070,058).

In claim 2, Saints and Kocher does not discloses step of processing received signal with a receive automatic gain control circuit(AGC). Waldroup's patent(US 6,070,058) discloses processing received signal with a receive automatic gain control circuit(AGC) in (col.9, lines 12-23). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ AGC taught in Waldroup with device disclosed Saints and Kocher in order to control such amplitude variations such that cellular phone or wireless device keeps in-band energy is transmitted to demodulator at a fixed level thus allowing incoming received signal to be normalized.

6.        Claims 6, 8,10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saints et al..(US 6,430,170) in view of Waldroup et al.(US 6,070,058).

In claim 6, Saints discloses all the limitations above. Saints does not discloses step of processing received signal with a receive automatic gain control circuit(AGC). Waldroup's patent(US 6,070,058) discloses processing received signal with a receive automatic gain control

Art Unit: 2131

circuit(AGC) in (col.9, lines 12-23). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ AGC taught in Waldroup with receiver disclosed in Saints in order to control such amplitude variations such that cellular phone or wireless device keeps in-band energy is transmitted to demodulator at a fixed level thus allowing incoming received signal to be normalized.

Claim 10: Saints does not discloses step of processing received signal with a receive automatic gain control circuit(AGC). Waldroup's patent(US 6,070,058) discloses processing received signal with a receive automatic gain control circuit(AGC) in (col.9, lines 12-23). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ AGC taught in Waldroup with device disclosed Saints in order to control such amplitude variations such that cellular phone or wireless device keeps in-band energy is transmitted to demodulator at a fixed level thus allowing incoming received signal to be normalized.

In claim 8, Saints discloses all the limitations above. Saints does not discloses Time Tracking Loop. The examiner takes Official notice that Time Tracking Loop is well known in the art especially in the wireless communication environment. One of ordinary skill in the art would be motivated to use Time Tracking Loop in order to track variations in the receive propagation delay over time and thus maintaining bit synchronization.

Art Unit: 2131

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saints et al.(US 6,430,170) in view of Kocher et al.(US 6,278,783) and further in view of Lee et al(US 6,038,266).

In claim 3, Saints and Kocher does not specifically discloses processing received signal with a DC Offset Correction Loop. Lee discloses DC offset correction circuit in (col.10, lines 53-55). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ DC offset correction circuit taught in Lee with device disclosed in Saints and Kocher in order to prevent instability of signal as well as to correct DC offset.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saints et al.(US 6,430,170) in view of Lee et al(US 6,038,266).

In claim 7, Saints discloses all the limitations above. Saints does not discloses processing received signal with a DC Offset Correction Loop. Lee discloses DC offset correction circuit in (col.10, lines 53-55). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ DC offset correction circuit taught in Lee with device disclosed in Saints in order to prevent instability of signal as well as to correct DC offset.

Claim 11: Saints does not specifically discloses processing received signal with a DC Offset Correction Loop. Lee discloses DC offset correction circuit in (col.10, lines 53-55). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ DC offset correction circuit taught in Lee with device disclosed in Saints in order to prevent instability of signal as well as to correct DC offset.

Art Unit: 2131

9. Claims 13,16-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saints (US 6,430,170) in view of Takahashi et al.(US 5,659,618).

In claims 13,18, Saints discloses a CDMA system for generating random data bits from the received signal and an encryptor for encrypting a transmitted signal in (col.3,lines 53-57 and col.3,lines 17-19; col.4,lines 29-36). Saints does not specifically A/D converter. Takahashi discloses A/D converter to convert analog signal to digital signal in (col.3,lines 8-16). It would have been obvious to person of ordinary skill in the art at the time invention was made to employ A/D converter disclosed by Takahashi with wireless device taught in Saints. As described in Takahashi's patent, an analog data must be converted to digital before encryption since encryption must be done in bits it must be converted to digital first else encrypting an analog data is not possible.

In claim 16, Saints and Takahashi discloses all the limitations above. Saints and Takahashi does not discloses Time Tracking Loop. The examiner takes Official notice that Time Tracking Loop is well known in the art especially in the wireless communication environment. One of ordinary skill in the art would be motivated to use Time Tracking Loop in order to track variations in the receive propagation delay over time and thus maintaining bit synchronization.

In claim 17, wireless phone is disclosed by Saints in (col.3,lines 53-57).

In claims 19,22, Saints and Takahashi does not disclose extracting random data bits from an AGC. The examiner takes Official notice that extracting random data bits from an AGC is well known in the art. Since one of the function of AGC is to normalize the incoming signal and



Art Unit: 2131

gain of the variable gain amp varies continuously, one of the ordinary skill in the art would be motivated to extract random variable from the AGC.

In claims 20,23, Saints and Takahashi does not disclose extracting random data bits from a DC Offset Correction Loop. The examiner takes Official notice that extracting random data bits from a DC Offset Correction Loop is well known. One of ordinary skill in the art would be motivated to extract random variable from DC Offset Correction Loop because of continuous variation of DC offset.

In claim 21,24, Saints and Takahashi does not disclose extracting random data bits from a Time Tracking Loop. The examiner takes Official notice that extracting random data bits from a Time Tracking Loop is well known. Because of propagation path delay varies randomly. One of ordinary skill in the art would be motivated to extract random variable from Time Tracking Loop.

10. Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saints.(US 6,430,170) in view of Takahashi et al.(US 5,659,618) and further in view of Waldroup et al.(US 6,070,058).

In claim 14, Saints and Takahashi discloses all the limitation above. However, Saints and Takahashi does not discloses a digital signal processing circuit comprises an automatic gain controller. Waldroup's patent(US 6,070,058) discloses processing received signal with a receive automatic gain control circuit(AGC) in (col.9, lines 12-23). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ AGC taught in Waldroup with receiver disclosed in Saints/Takahashi in order to control such amplitude variations such that

Art Unit: 2131

cellular phone or wireless device keeps in-band energy is transmitted to demodulator at a fixed level thus allowing incoming received signal to be normalized..

11. Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saints.(US 6,430,170) in view of Takahashi et al.(US 5,659,618) and further in view of Lee et al(US 6,038,266).

In claim 15, Saints and Takahashi discloses all the limitation above. However, Saints and Takahashi does not discloses processing received signal with a DC Offset Correction Loop. Lee discloses DC offset correction circuit in (col.10, lines 53-55). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ DC offset correction circuit taught in Lee with device disclosed in Saints/Takahashi in order to prevent instability of signal as well as to correct DC offset.

12. Claims 25-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saints.(US 6,430,170) in view of Waldroup et al.(US 6,070,058). and further in view of Lee et al(US 6,038,266).

Claims 25-32: Saints disclose generating random data bits in (col.3,lines 53-57 and col.3,lines 17-19; col.4,lines 29-36). Saints does not discloses step of processing received signal with a receive automatic gain control circuit(AGC). Waldroup's patent(US 6,070,058) discloses processing received signal with a receive automatic gain control circuit(AGC) in (col.9, lines 12-23). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ AGC taught in Waldroup with receiver disclosed in Saints in order to control

Art Unit: 2131

such amplitude variations such that cellular phone or wireless device keeps in-band energy is transmitted to demodulator at a fixed level thus allowing incoming received signal to be normalized. Adding bits to a random data pool is disclosed by Saints in (col.4, lines 33-36). Lee discloses DC offset correction circuit in (col.10, lines 53-55). It would have been obvious to person of ordinary skill in the art at the time the invention was made to employ DC offset correction circuit taught in Lee with device disclosed in Saints in order to prevent instability of signal as well as to correct DC offset. Saints does not disclose Time Tracking Loop. The examiner takes Official notice that Time Tracking Loop is well known in the art especially in the wireless communication environment. One of ordinary skill in the art would be motivated to use Time Tracking Loop in order to track variations in the receive propagation delay over time and thus maintaining bit synchronization.


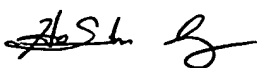
Claim 33: Saints disclose wireless device is wireless phone in (col.3, lines 53-57).

### ***Conclusion***

12 Any inquiry concerning this communication from the examiner should be directed to Examiner Hosuk Song whose telephone number is (703)305-0042. The examiner can normally be reached on Tuesday-Friday from 6:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gail Hayes, can be reached on (703)305-9711.

Any inquiry of a general or relating to the status of this application or proceeding should be directed to the Technology Center receptionist whose telephone number is (703)305-3900.



GAIL HAYES  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100